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- 1. A packet communication mothod for a network having a plurality of bus systems interconnected by at least one bus bridge, wherein at least one node is attached to each of said bus systems, wherein said bus systems, each bridge and said node are in compliance to a testal bus standard, characterized in that said bus bridge establishes a connection between a first channel used in a first bus system of said plurality of bus systems for transmission of packets to a first multicast address and a second channel used in a second bus system of said plurality of bus systems for transmission of packets to a second multicast address if said first and second multicast address are equal to eath other.
- 2. A parket communication method for a network having a plurality of bus systems interconnected by at least one bus bridge, wherein at least one node is attached to each of said bus systems, wherein said bus systems, said bridge and said mode are in compliance to a serial bus standard, characterized in that:

sold at least one node attached to each of said plurality of bus systems, when initiating a multicast packet transmission to a multicast group of the bus system, acquires a channel to be used for said multicast packet transmission and broadcasts a message pertaining to said channel; and

said at least one but bridge establishes a connection between channels unquired for different but systems when said message to received from each of said different but systems.

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3. A pecket communication method for a network having an intermediate bus system connected between first and second bus systems by first and second bus bridges, wherein at least one node is attached to each of said bus systems, and wherein said bus systems, and bridge and said node are in compliance to a serial bus standard, characterized in that:

said at least one node attached to each of said bus systems acquires a channel to be used for multicast packet transmission and broadcasts a message pertaining to said channel and a multicast group when initiating a multicast packet transmission to Said multicast group:

said first bun bridge acquires an interconnection channel if there is no node in said intermediate bus system participating in said multicast group and if two of said message having an identical multicast address are received, one from said first bus system and the other from said second bus system, broadcasts a message pertaining to said interconnection drannel and said multicast group and connects a first end of the interconnection channel to the channel acquired for said first bus system; and

usid second bus bridge connects a second end of the interconnection channel to the channel sequired for the second bus system when said message is received from said first bus bridge.

4. A packet communication method for a network having a plurality of bus systems interconnected by at least one bus bridge, wherein at least one node is attached to each of said bus systems, and wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that:

said at least one node attached to each of said plurality of bus systems

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Anquires a first channel to be used for multicast packet transmission and broadcasts a first message containing information pertaining to said first channel and a multicast group when initiating a multicast packet transmission to said multicast group;

sold at least one node on each of said bus systems when operating as a receive-only node acquires a second channel if said first message is received when the bus system of the receive-only node has no node responsible for channel acquisition, and broadcasts a second message pertaining to said second channel and said multicast group; and

said at least one bus bridge establishes an inter-chancel connection between said first and second channels when said first and second messages are received.

- The packet communication method of claim 3, wherein said first
 bus bridge is determined as a bridge responsible for acquisition of said interconnection channel depending on relative values of identifiers assigned to said first and second bus bridges.
- 6. The packet communication method of claim 3, wherein said first
 bus bridge is determined as a bridge responsible for acquisition of said
 interconnection channel depending on a random number.
- 7. A packet communication method for a network comprising a
 plurality of nodes, first and second bus systems to which said nodes are
 attached, and a bus bridge for performing a transfer of packets between said
 first and second bus systems, the method comprising the steps of:

- a) acquiring, et a first mode attached to said first bus system, e first channel for transmission of packets to a first multicast address and broadcasting a first mussage pertaining to said first channel and said first multicast address:
- ecquiring, at a second mode attached to the second bus system, a second channel for transmission of packets to a second multicast address and broadcasting a second message pertaining to said second channel and said second multicast address; and
- c) receiving, at said bus bridge, the first and second messages and establishing a connection between two channels respectively identified by the received messages if the multicast addresses contained therein are equal to each other.
- 8. A packer communication method for a network comprising first and second bus systems and an intermediate bus system between said first and second bus systems, a plurality of nodes attached to said first, second and intermediate bus systems, and a first bus bridge for performing a transfer of packets between said first and intermediate bus systems, and a second bus bridge for performing a transfer of packets between said intermediate and second bus systems, the method comprising the steps of:
- a) acquiring, at a first node ottached to said first bus system, a first channel for transmission of packets to a first multicast address and broadcasting a first message portaining to said first channel and said first multicast address;
- acquiring, at a second node attached to said second bus system,
 a second channel for transmission of packets to a second multicast address

 λ and broadcasting a second ministage pertaining to said second channel and said second multicast address;

- c) receiving, at said first but bridge, the first and accord messages and acquiring a third channel for transfer of packets on said intermediate but system if the received first and second messages indicate that the multicast addresses contained therein are equal to each other, establishing a connection however a channel identified by the received first message and the acquired third channel, and broadcasting from said first but bridge a third message permitting to said third channel.
- d) receiving, at said second bus bridge, the first and second messages from said first and second nodes and subsequently receiving said third message from said first bus bridge if the received first and second mussages indicate that the multicast addresses contained therein are equal to each other, and establishing a connection between two charmots respectively identified by the second and third messages.
- 9. A packet communication method for a network comprising a
 1. plurality of nodes, first and second bus systems to which said nodes are
 2. attached, and a bus bridge for performing a transfer of packets between
 2. adjacent said first and second bus systems, the method comprising the steps
 3. cf.
 - acquiring, at a first node attached to said first bus system. a first channel for transmission of packets to a multicast address and broadcasting a first threstage pertaining to said first channel and said multicast address;
- b) acquiring, as a second, receive-only node attached to said but
 system, a second channel for reception of packets from the first node in

 λ response to receipt of said thus message and broadcasting a second message pertaining to said second channel and said multicast address:

- c) receiving, at said bus bridge, the first and accord messages and establishing a connection between two channels respectively identified by the received first and second messages if multicast addresses contained therein are equal to each other.
- --10. (Amended) The packet remunication method of claim
 7, wherein the step (c) comprises establishing said connection
 by converting a channel identifier contained in a multicast
 packet received on said first channel to a channel identifier
 identifying said second channel and converting a channel
 identifier contained in a multicast packet received on said
 second channel to a channel identifier identifying said first
 channel.
- 11. [Amended] The packet communication method of claim 7.

 wherein datd first and second massages further contain first and second hus identifiers respectively identifying said first and second bus systems, and wherein said hus bridge has first and second ports respectively connected to said first and second bus systems, and wherein the step [c] comprises establishing said connection if the bus bridge receives said first measage through said first port and said second messages through said second port and if said first and second bus identifiers respectively contained in said first and second messages indicate that and bus bridge is directly connected to maid adjacent bus systems.

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12. The packet communication method of claim 8, wherein the step

(e) comprises:

establishing said connection, at said flest bus bridge, by converting a channel identifier contained in a multicast parket received on said first channel to a channel identifier identifying said third channel and converting a channel identifier contained in a multicast parket received on said third channel identifier identifying said first channel, and

establishing said connection, at said second bus bridge, by converting a channel identifier contained in a multicast packet received on said second channel to a channel identifier identifying each third channel and converting a channel identifier contained in a multicast packet received on said third channel to a channel identifier identifying each second channel.

13. The packet communication method of claim 8, wherein said first and second messages further contain first and second bus identifiers respectively identifying asid first and second bus systems, and wherein asid first bus bridge has first and second ports respectively connected to said first and intermediate bus systems, and said second bus bridge has first and second ports respectively connected to said intermediate and second bus systems, wherein the step (c) comprises:

establishing said connection, at said first bus bridge, if the first bus bridge receives said first message through said first port and said second message through said second port and if said first and second bus identifiers respectively contained in said first and second messages indicate that the first bus bridge is directly connected to said first bus system, and

establishing said connection, at said second bus bridge, if the second bus bridge receives said first message through said first port and said second

- message through said second port and if said first and second bus identifiers respectively contained in said first and second messages indicate that the second bus bridge to directly connected to said sacond bus system.
- 14. The packet communication method of claim 6, wherein said first hus bridge is determined as a bridge responsible for acquisition of said third channel depending on relative values of identifiers assigned to said first and second bus bridges.
- 15. The packet communication method of claim 8, wherein said first bus bridge is determined as a bridge responsible for acquisition of said third channel depending on a random number.
- 16. A bus bridge for interconnecting a plurality of bus systems of a packet communication network, each of said bus systems including at least one node, wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that said bus bridge establishes a connection between a first channel used in a first bus system of said plurality of bus systems for transmission of packets to a first multicast address and a second charnel used in a second bus system of said plurality of bus systems for transmission of packets to a second multicast address if said first and second multicast addresses are equal to each other and said first and second channels have different channel identifiers from each other.
- 17. A packet communication retwork comprising a plurality of bus systems interconnected by at least one bus bridge, wherein at least one node

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is attached to each of said bus systems, and wherein said bus systems, said bridge and said mode are in compliance to a serial bus standard, characterized in than

said at least one node attached to each of said plurality of but systems, when initiating a multicast packet transmission to a multicast group of the busysystem, acquires a channel to be used for said multicast packet transmission and broadcasts a message containing information perturning to each channel and

said at least one bus bridge establishes a connection between thannels sequired for different bus systems when said message is received from each of said different bus systems.

18. A packer communication network comprising an intermediate bus system convected between first and second bus systems by first and second bus bridges, wherein at least one mode is attached to each of said bus systems, and wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that:

said at least one node attached to each of said bus systems is responsible for acquisition of a channel to be used for multicast packet transmission and broadcasts a message containing information pertaining to said channel and a multicast group when initiating a multicast packet transmission to said multicast group;

said first bus bridge acquires an interconnection charmel if there is no node in said intermediate bus system participating in said multicast group and if two of said message having an identical multicast address are received, one from said first bus system and the other from said second bus system.

broadcasts a message pertaining to said interconnection channel and said institutes a group and connects a first end of the interconnection channel to the channel acquired for said first bus system; and

said second bus bridge connects a second end of the interconnection channel to the channel acquired for the second bus system when said message to received from said lifet bus bridge.

19. A packet communication network comprising a plumility of bus systems interconnected by at least one bus bridge, wherein as least one node is attached to each til said bus systems, and wherein said bus systems, said bridge and said node are in compliance to a sortal bus standard, characterized in that:

said at least one node attached to each of said plurality of bus systems acquires a first channel to be used for multicast packet transmission and broadcasts a first message containing information pertaining to said first channel and a multicast group when initiating a multicast packet transmission to said multicast group;

sold at least one node on each of said bus systems when operating as a receive-only node acquires a second channel if said first message is received when the bus system of the receive-only node has no node responsible for channel acquisition, and broadcasts a second message pertaining to said second channel and said multicast group; and

said at least one bus bridge establishes an inter-channel connection between estid first and second channels when said first and second messages are received. Art Unit: ***

- 20. The packet communication network of claim 19, wherein said has bus budge to determined on a bridge responsible for acquisition of said interconnection channel depending on relative values of identifiers assigned to said first end second bus bridges.
- 21. The packet communication network of claim 19, wherein said first bus bridge is determined as a bridge responsible for acquisition of said interconnection channel depending on a random number.
 - A pecket communication network comprising:
 a plurality of nodes;

first and second bus systems to which said nodes are attached; and a bus bridge for performing a transfer of patkets between said first and second bus systems;

a first node attached to sold first bus system acquiring a first channel for transmission of packets to a first multicast address and broadcasting a first message pertaining to said first channel and said first multicast address;

a second node attached to the second bus system acquiring a second channel for transmission of packets to a second multicast address and broadcasting a second massage pertaining to said second channel and said second multicast address.

said bus bridge receiving the first and second messages and establishing a connection between two channels respectively identified by the received messages if the multimet addresses contained therein are equal to each other.

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23. A packet communication network comprising:

first and second bus systems and an intermediate bus system between said first and second bus systems;

- a plurality of nucles attached to said first, second and intermediate bus systems:
- a first bus beidge for performing a transfer of packets between said first and intermediate bus systems;
- a second bus bridge for performing a transfer of packers between said intermediate and second bus systems;
- a first made attached to said first bus system acquiring a first channel for transmission of packets to a first multicast address and broadcasting a first message pertaining to said first channel and said first multicast address,
- a second node attached to said second but system acquiring a second channel for transcription of packets to a second multicast address and broadcasting a second message pertaining to said second channel and said second multicast address.

said first bus bridge receiving the first and second messages, acquiring a third channel for transfer of packets on said intermediate bus system if the received messages indicate that the multicast addresses contained therein are equal to each other, establishing a connection between a channel identified by the received first message and the exquired third channel, and broadcasting a third message pertaining to said third channel.

said second true bridge receiving the first and second messages, and subsequently receiving said third message if the received first and second messages indicate that the multicast addresses contained therein are equal to each other, and establishing a connection between two channels respectively

Andersified by the second and third messages.

24. A packer communication network comprising:

a plurality of nodes:

first and second but systems to which said nodes are attached; and a bus bridge for performing a transfer of packets between adjacent said first and second but systems.

- a first node attached to said first bus system acquiring a first channel for transmission of packets to a multicast address and broadcasting a first message pertaining to said first channel and said multicast address.
- a second, receive-only node attached to said bus system acquiring a second channel for reception of packets from the first node in response to receipt of said first message and broadcasting a second message pertaining to said accord channel and said multimat address,

said but bridge receiving the first and second messages and establishing a connection between two channels respectively identified by the received first and second messages if multicast addresses contained therein are equal to each other.

25. [Amended] The packet communication network of claim 22, wherein said bus bridge establishes said connection by converting a channel identifier contained in a nulticast packet received on said first channel to a channel identifier identifying said second channel and converting a channel identifier contained in a multicast packet received on said second channel identifier identifying said first channel,

26. (Amended) The packet communication network of claim 22, wherein said first and second nessages further contain first and second bus identifiers respectively identifying said lirst and second bus systems, and wherein said bus bridge has

first and second ports respectively connected to said first and second bus systems and establishes said connection if the bus bridge receives said first message through said first port and said second sessage through said second port, and if said first and second bus identifiers respectively contained in said first and second messages indicate that said bus bridge is directly connected to said adjacent bus systems.--

28. The packet communication network of claim 23, wherein said first and second messages further contain first and second bus identifiers respectively identifying said first and second bus systems, and wherein said first bus bridge has first and second pure respectively connected to said first

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 δ and intermediate bus systems, and said second bus bridge has first and second ports respectively connected to said intermediate and second bus systems,

wherein each of said first and second bus bridges entablishes said connection if the bus bridge receives said first message through said first port and said accord message through said second port, and if said first and second bus identifiers respectively contained in said first and second messages indicate that the first and second bus bridges are directly connected to said first and second bus systems, respectively

- 29. The packet communication network of claim 23, wherein raid first our bridge is determined as a bridge responsible for acquisition of said third channel depending on relative values of identifiers assigned to said first and accord has bridges.
- 30. The pecket communication network of chim 23, wherein said first but bridge is determined as a bridge responsible for acquisition of said third channel depending on a random number.

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